way to carry out Congress' intent that access to advanced technologies by schools and libraries "will assure that no one is barred from benefiting from the power of the Information Age", (Congressional quote in Paragraph 442 of Joint Board's recommendations).

We applaud the Board's determination to push discounts for qualified schools and libraries into the advanced technologies and services, providing for discounts for internal wiring, Internet access and discounts up to 90 percent for schools and libraries serving disadvantaged populations.

APT, however, believes that it is wishful thinking to expect that a system of liberal discounts to provide students and rural health care providers with access to voice services will prevent "at risk" populations from being marginalized in the development of competitive markets for telecommunications. Desirable as these discounts are, the Joint Board failed to confront the question of how the use of technology in the schools and libraries is going to impact the great disparities between the information rich and information poor and how it will make up for the lack of access to communications services by families in their home and work place. Addressing what it takes to make market forces work for "all Americans" is the challenge of Section 706's commitment. It is a challenge that needs to be met now by the FCC as it acts on the Joint Board recommendations since special discounts by themselves will not do it.

At this juncture of rule making, balancing the potential for market failures with the many benefits of unleashing market forces requires a sharp focus on the communities of interest which are "at risk" of being by-passed or underserved. Yet the Joint Board does not recognize or deal with the possibility of market failure.

The targeted discounts, while important drivers cannot be expected to overcome the implicit "market failures", which historically have been a concomitant to the nation's commitment to and reliance on market forces for the production and distribution of goods and services. These market failures are abundantly clear in the mal-distribution of health care services, in the lack of affordable and decent housing for all households and in many other aspects of our increasingly polarized society.

Similar market failures in the distribution of advanced telecommunications are also inevitable. They need to be anticipated, identified, prevented, or mitigated and overcome if the advanced universal service objectives of Sections 254 and 706 are to be realized, as intended by Congress.

The Joint Board's decision to isolate Section 706 for later consideration violates Congressional recognition that network deployment is an integral part of reaching the

Act's goal of ensuring access to advanced telecommunications services for all Americans and will drive the nation in the direction of an information rich/poor society.

2. FCC Must Modify the Joint Board Recommendations In Order to Establish a Migratory Path for Universal Service Supports from Basic Services to Advanced Telecommunications Services For All Americans.

It is essential that the FCC in implementing the new Telecom Act act now to optimize, pro-actively, the capacity of advanced communications systems to build "community" out of diversity and to help mitigate and reverse the polarization of society that is ripping America apart.

In this and other proceedings, including the interconnection proceeding, APT has made recommendations to breathe some life into the promise of section 706. In a competitive environment, technology neutral investment incentives to build out high capacity network for ubiquitous deployment of advanced telecommunications technologies will be the determinants of what is to become of the public utility concept of "universal service". Much can be done in this respect by building universal service-oriented investment incentives into the Joint Boards recommendations, and by doing it in this rulemaking proceeding.

APT has emphasized in its FCC filings that community-based technology applications should be the central focus of investment incentives to competitive providers. APT has argued that communities must aggregate their demands for advanced service applications so that the market place can understand the potential market for advanced network capabilities.

We view deferral of implementation of Section 706 to the 30-month Notice of Inquiry proceeding to be a non-response to the proactive policy recommendations advanced by APT. We are particularly concerned that if the Joint Board's recommendations are not strengthened to specifically address the vulnerability of "at risk" communities --be they rural or urban-- to the inevitability of market failures, the essential foundation of basic services and discounts for high-priority, community-based applications of telecommunications technology will remain a largely underdeveloped building block.

There is danger that chaos will reign at the state and community levels if the FCC takes the position that the complexity of integrating implementation of section 706 with section 254 requires a gestation period of a couple of years in order for the FCC to determine what federal policies are needed to carry out the 706 commitment. It is the very complexity of making market forces work for everyone that is stirring state action.

APT believes that the FCC must focus on community-driven demand aggregation for state experimentation in order to impress upon state regulators that the advanced universal service commitment cannot be left to the play of market forces alone. Leaders of "at risk" communities who know what market failures are all about are demanding that they become community partners in shaping advanced telecommunication networks. Market development and simultaneous community building in the information age is necessarily a joint, dynamic, iterative, cumulative learning process which draws on both technology providers and users.

Bridging sections 706 and 254 requires an explicit recognition of the responsibilities which fall upon the states, with federal backing, in developing and deploying advanced technologies to reach the full spectrum of society.

States must be encouraged to experiment with market-oriented policies. An FCC mandate to the states at this point must be compelling enough to stir state action. Such a mandate to the states regarding section 706 implementation should include the responsibility to assure the full participation of "at risk" communities in the process of determining how discount subsidies are to be utilized by their community-based institutions.

At a minimum, the states should be encouraged to experiment with designing migratory paths to advanced services that can be reviewed within the 30 month time- frame for

initiating an evaluation of how well market forces are responding to the competitive framework embodied in the 1996 Act.

We believe that the FCC has no alternative but to act now to establish such a migratory path to advanced telecom services. Specifically, we suggest that FCC take the following steps now to promote these migratory paths:

- Allocate some percentage of the intrastate portion of the universal service fund to finance state experiments to implement community based applications to aggregate demand for advanced telecommunications services.[4]

- Establish eligibility standards for institutional public users of the special discounts which require such users to participate in coalitions or in strategic planning groups which are looking to aggregate community demands for advanced telecommunications services or are themselves developing strategies to use telecommunications services and facilities to provide public education, information or health care services to residences and public access points.

[4] We have elaborated what some of these equitable financial incentives might consist of in our previous universal service filings, DKT 96-95 pp.

We are also concerned that the Joint Board deferred any reconsideration of its universal service definitions until 2001 and refused to require any reports other than those already required by the FCC. An essential element in the migratory path to advanced telecommunication services is information on how the market place is achieving the hoped for build out to providing advanced services to all Americans.

The FCC must modify the Joint Board's recommended decision in these respects and take the following steps:

- Require carriers, public utilities, state highway authorities and state advanced network managers to file annual reports on their network modernization plans, and on the geographic location, scope and capabilities of their networks;

- Require states to start mapping, in terms of specific capabilities, how the build out of modernized networks is progressing and to give special attention to problems of social and economic redlining as they evolve;

- Order annual reviews of the use of services entitled to universal service support by community and special discount users and of the types of and geographic areas in which advanced service applications not now currently included as entitled to receive universal service support are being offered. This would enable the FCC to evaluate how

subsidies to schools, libraries, and health care institutions actually play out in expanding community access to advanced technologies.

III. Health Care Recommendations and FCC Questions

The FCC has asked for comments on several aspects of the Joint Board's Health Care Recommendations. APT is addressing only two of the FCC's requests for comments: (1) the scope of health care services and telecommunications needs of rural health care providers; and (2) the cost considerations involved in upgrading the public switched network to respond to these needs.

1. Scope of Services and Needs of Providers

In order to understand the telecommunications needs of rural health care providers, it is essential to understand first, the major demands being made on our health care system today and second, the potential of telecommunications to meet these demands and the scope of services which it can provide in rural areas.

(a) The Needs of Our Health Care System Today:

Health care today is focusing increasingly on preventive care, facilitating self care and managing convalescence and chronic illness. It is no longer centered primarily in hospitals. It is delivered in out patient facilities, community health clinics, nursing homes, assisted living facilities, senior centers and increasingly in the home by a variety of health care providers, including physicians, physicians assistants, nurses, nurse practitioners and visiting nurses, therapists, nutritionists, home health aides and social workers.

Health care today is essentially a team effort. But team members are no longer congregated in the hospital where their coordination of the patient's care was a relatively simple function of reading the patient's record at the bottom of their bed, daily staff meetings and face to face encounters in the hall. Today, team members treating a patient even if they are in the same city or rural area are just as remote from each other as the rural primary care physician is from the big city specialist or lab. A major driver of managed care is the need to coordinate what has in the past been highly fragmented care provided by different providers who have been unrelated to each other.

Telemedicine is becoming one of the critical means of responding to the new health care as it is being delivered today. Telemedicine is not simply a way of transcending distances between primary care physicians and remotely located specialists. Rather, it is an essential element to serve the needs of rural communities and to facilitate the coordination among the health care team members and facilities located in the same

community. This is also essential if these diverse health care providers and facilities are to work effectively together. It substitutes for the face to face visits of the visiting nurse while at the same time creating a record of the contact which is available to all team members. Similarly, it enables patients to interact with their occupational, speech or physical therapists without either patient or therapist having to travel. It enables patients to "see" their doctor when the need arises without having to wait for an appointment or, more typically, forego the visit because it is inconvenient or impossible and thus waiting until the condition gets so aggravated that more costly emergency care or hospitalization is required. The availability of telemedicine can forestall the patient's premature and more costly institutionalization in a nursing home simply because care is not available in the home or in an assisted living facility.

Because of the more comprehensive patient record which is created upon each telemedicine contact, the use of telemedicine enables the team members to coordinate their treatment of the patient and to communicate their observations of the patient in a variety of settings and circumstances to all of the other team members in a timely and cost effective way. Case management decisions can be made - and revised as the patient's condition improves or worsens- with the participation of the patient, family member or care giver on the one hand and the relevant members of the patient's health care team on the other. Care is coordinated and wasteful fragmentation and duplication of services by

facilities and health care providers can be eliminated through the widespread use of telemedecine.

(b) Health Care Service Needs of Rural Communities

In addition to the more familiar health care services, other advanced services include, such as teleradiology and remote specialist consults with local physicians. There is a broad range of health care services which can also be provided by advanced telecommunications that are of great concern to a significantly broader segment of the population.

These services fall into several categories as follows:

- Patient self care, wellness promotion, access to health care information and health care provider continuing education;

To ensure effective and timely access to these services, it is essential that rural patients and providers have access on demand to interactive, multi media communications in their homes since consumers are unlikely to seek health care information except in the privacy of their homes:

On demand because patients will most likely seek and use information when they perceive a need for it and that need can be conveniently and effectively satisfied;

Interactive because information prepared for that mythical average consumer and provided to a user without knowledge of the user's health status and needs will not likely be read or used; and

Multimedia because video communications are more effective teaching and learning tools than texts for many consumers and provide the essential ingredient of motivation to use the information which has been so lacking in the past efforts to get patients to engage in self care.

-Assessment, Diagnostic and Treatment Services

Chronic or convalescing patients in their homes who cannot easily travel to health care facilities have increasing needs for health care services. The telemedicine technology is capable of remote delivery of a broad variety of electronic monitoring and treatment modalities between the home, clinic or hospital. Using digital compression to carry sound and visual images, using stethoscopes, endoscopes, electrocardiography, radio and sonographic equipment that can carry high quality diagnostic information electronically from patient to remote health care provider.

-Supervision and Instruction of Patient, Caregiver and Home Care Worker

As more and more patients can or must look to receiving health care in their homes, the instruction and supervision of their care givers and home care workers is

pivotal to their care. Printed instructions can be helpful as can oral instruction at the time of the patient's discharge from the health care facility. However, care givers can be forgetful or can panic in an emergency, resulting too often in unnecessary calls for an ambulance. Some patients who can make a visit to their clinic or rehabilitation therapist often skip it because of its inconvenience.

On line face to face electronic instruction on demand at the time of need can be much more effective and less costly than printed or one time oral instructions. By the same token, on line supervision of home care workers and timely handling of misunderstandings between patient and home care workers on line, in place of an actual home visit or substitution of a home health aide, can be more effective and save a substantial portion of home care costs.

-Support Groups For Patients and Family Members

The medical profession has recognized that access to support groups can have significant therapeutic impact on patients, shortening convalescence and relieving caregiver burnout and stress. By definition, home bound patients and their care givers cannot easily arrange schedules to participate in support groups. Voice communications or asynchronous "chat" on computer links are feasible but not as effective as video conferencing.

The urgency of the need to deliver cost effective quality health care to rural communities and the potential benefits of electronically delivered health care to patients in their homes are so great that the FCC must include these services in its definition of services which are entitled to universal service support.

Almost 2.5 million persons, approximately 2.5% of the US population, received home care in 1987. The number is even given the increased number of people who are discharged from hospitals but require intensive care for convalescence from acute interventions, suffer from strokes, heart disease, arthritis or Aids, have disabilities, are young mothers with high risk pregnancies, low birth weight babies or who are frail elderly people with motor, cognitive, visual or hearing impairments. Children under the age of 17, accounting for 70 million of our population, and the functionally impaired elderly, accounting for 14.5 million persons, together, constitute a sizable portion of the real cost of health care. Telecommunications can reduce the cost of treating these patients and enable them to avoid institutional care on a long term or acute care basis. It can reduce the costs of home care workers, visiting nurses and therapists and facilitate the effectiveness of the work of their health care provider team.

This will require, as the FCC has recognized in its call for comments, the need to accelerate the universal deployment of advanced networks as defined in Section 706

through universal service support for these networks. While, some of the services listed above can be delivered over the existing copper network, many of them require higher resolution that the network can provide. Network capabilities of 1.5 mbps should in fact be sufficient to meet the bulk of the health care needs of rural communities enumerated above.

The alternative of leaving network deployment solely to market forces will only exacerbate the division between the information rich and information poor. These terms are in a broad sense merely surrogate terms for the populations segments which reside in affluent urban areas on the one hand, and in less affluent less highly populated rural and inner city areas, as well as in small towns throughout the nation on the other. The issue of the cost considerations of these networks is discussed below.

2. Network Cost Considerations

It is clear that the use of the existing public switched network upgraded to provide advanced services as defined in Section 706 of the Telecom Act constitutes a much more cost effective network to ensure the implementation of the 1996 Telecommunications Act by supporting the use by public institutions of leased T-1 or other dedicated lines.

Although APT cannot provide cost estimates for this upgrading, since the costs will be different for every community and state, there are certain considerations which the FCC must take into account in estimating these costs.

- The typical telemedicine hub and spoke leased line configuration for the delivery of health care from medical center or remote specialist to rural primary care physicians is more expensive than using a switched network and is not as responsive to the needs of rural health care providers. The need of local rural health care providers to be linked with remote specialists and labs, while important, is much less frequent than their daily interactions with each other. Yet they have the same advanced network needs as these remote specialist/local provider contacts in order to interact visually with each other and their patients and to exchange their patients' health care data, test results, lab reports, ex rays and the like.

Given the wide range of these local providers of health care in rural communities- physicians, physicians assistants, nurses, nurse practitioners, therapists, home health aides, nutritionists and patients- their needs are for a switched telecommunications network which can connect them to each other in their homes, offices, local health center or health care facility.

Clearly an upgraded switched public network has an enormous contribution to make to enable rural health care providers to meet their advanced telecommunications needs.

- Every local exchange carrier has modernization plans in place today to upgrade their public network to carry these advanced services. In addition, many states have built high speed networks to provide health care and other telecommunication services with varying degrees of penetration in rural parts of the state. Other high speed networks are beginning to be deployed by electric utilities, highway departments to provide traffic control along major free ways and by other private and public entities to link specific facilities. None of these networks reach all communities in a rural area, for example, nor do they reach to individual offices, clinics or homes of patients and health care providers. Yet they are significant in considering a community's costs of providing telecommunications services. A community could find that it was only a short distance from a smart highway fiber link or from a fiber installation belonging to an electric utility or other entity with which it might be able to negotiate some type of linkup thereby reducing its costs of providing switched communications within the community.

- Everything the FCC can do to accelerate public network upgrades or the deployment of other network technologies such as wireless, which may in the future offer other paths to providing universal access to advanced telecommunications, makes it unnecessary for schools, libraries and health care facilities to lease dedicated T-1 lines. It also reduces the

amount of universal service support which they will need to cover the costs of the accessing the advanced telecommunications services they need and are ensured by the Telecommunications Act.

- Advanced network deployment and technology costs are changing and declining in cost so rapidly that any estimates provided for these costs must be regarded as valid at best for the following one or two years. As carriers design new network configurations that bring essential hardware closer to the home and usage volumes thereby increase, costs will drastically decline.

- FCC universal support mechanisms should lay down the principle that eligibility for such support requires that the most cost effective way of providing advanced telecommunications links in its service area is being proposed or utilized, eg. public switched network instead of a leased line or deploying a spur to link to the nearest available advanced network.

In summary:

1. Advanced services for rural health care providers to be supported by universal service funds must encompass:

-advanced communications between health care providers located within rural areas;

-a broad range of health care providers within rural areas are located in out-patient facilities, nursing homes, hospitals, community health care clinics, assisted living facilities and senior centers;

-high speed data, image and video conference communications to facilitate transfer of health care data such as X rays, patient consults, and patient, caregiver and health care provider instruction and education;

2. Principles To Be Considered In Public Network Upgrades should include attention to:

- the type of network configurations being used to ensure their reach to the broadest segment of health care providers;

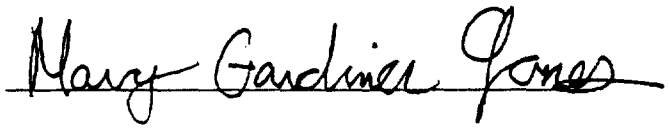
- the accessibility to communities of high speed advanced networks developed by public utilities, state highway, health and education departments and other entities which may cost very little to connect to technologies, deployment and equipment;

-the short life of network deployment cost estimates due to the rapidly changing and declining costs of networks as a result of evolving carrier network configurations and rising usage;

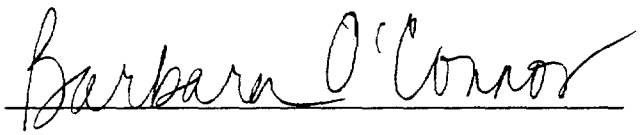
-the lower cost of using public network facilities over private leased or dedicated lines which can reduce the amount of universal service support required by a health care provider; and

-development of eligibility requirements for universal service support which relate to use of the least expensive and most cost effective way of providing access to telecommunications services.

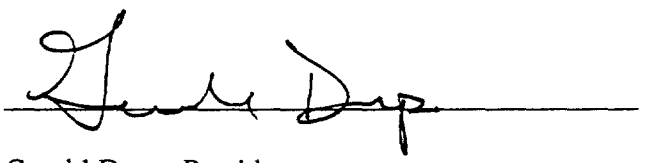
On behalf of the Alliance for Public Technology:



Mary Gardiner Jones, Chair Policy Commitee



Barbara O' Connor, Chair



Gerald Depo, President

I, Cristina Quaid, a secretary with the Alliance for Public Technology, hereby certify that on this 19th day of December, 1996, was mailed, first class postage prepaid to the following:

The Honorable Reed E. Hundt
Chairman
Federal Communications Commission
1919 M Street, NW Room 814
Washington, DC 20554

The Honorable Rachelle B. Chong
Commissioner
Federal Communications Commission
1919 M Street, NW Room 844
Washington, DC 20554

The Honorable Susan Ness
Commissioner
Federal Communications Commission
1919 M Street, NW, Room 832
Washington, DC 20554

The Honorable Julia Johnson
Commissioner
Florida Public Service Commission
2540 Shumard Oak Blvd.
Gerald Gunter Building
Tallahassee, FL 32399-0850

The Honorable Kenneth McClure
Commissioner
Missouri Public Service Commission
301 W. High Street, Suite 530
Jefferson City, MO 65101

The Honorable Sharon L. Nelson
Chairman
Washington Utilities and Transportation
Commission
P.O. Box 47250
Olympia, WA 98504-7250

The Honorable Laska Schoenfelder
Commissioner
South Dakota Public Utilities Commission
State Capitol, 500 E. Capitol Street
Pierre, SD 57501-5070

Martha S. Hogerty
Public Counsel for the State of Missouri
P. O. Box 7800
Jefferson City, MO 65102

Paul E. Pederson, State Staff Chair
Missouri Public Service Commission
P. O. Box 360
Jefferson City, MO 65102

Lisa Boehley
Federal Communications Commission
2100 M. Street, NW, Room 8605
Washington, DC 20554

Charles Bolle
South Dakota Public Utilities Commission
State Capitol, 500 E. Capitol Street
Pierre, SD 57501-5070

Deonne Bruning
Nebraska Public Service Commission
300 The Atrium
1200 N Street
P.O. Box 94927
Lincoln, NE 68509-4927

James Casserly
Federal Communications Commission
Office of Commissioner Ness
1919 M Street, Room 832
Washington, DC 20554

John Clark
Federal Communications Commission
2100 M Street, NW, Room 8615
Washington, DC 20554

Bryan Clopton
Federal Communications Commission
2100 M Street, NW, Room 8615
Washington, DC 20554

Irene Flannery
Federal Communications Commission
2100 M Street, NW, Room 8922
Washington, DC 20554

Daniel Gonzalez
Federal Communications Commission
Office of Commissioner Chong
1919 M Street, NW, Room 844
Washington, DC 20554

Emily Hoffnar
Federal Communications Commission
2100 M Street, NW, Room 8623
Washington, DC 20554

L. Charles Keller
Federal Communications Commission
2100 M Street, N.W., Room 8918
Washington, DC 20554

Lori Kenyon
Alaska Public Utilities Commission
1016 West, Sixth Avenue, Suite 400
Anchorage, AK 99501

David Krech
Federal Communications Commission
2025 M Street, NW, Room 7130
Washington, DC 20554

Diane Law
Federal Communications Commission
2100 M Street, NW, Room 8920
Washington, DC 20554

Mark Long
Florida Public Service Commission
2540 Shumard Oak Blvd.
Gerald Gunter Building
Tallahasse, FL 32399

Robert Loube
Federal Communications Commission
2100 M Street, NW, Room 8914
Washington, DC 20554

Samuel Loudenslager
Arkansas Public Service Commission
P.O. Box 400
Little Rock, AR 72203-0400

Sandra Makeeff
Iowa Utilities Board
Lucas State Office Building
Des Moines, IA 50319

Philip F. McClelland
Pennsylvania Office of Consumer Advocate
1425 Strawberry Square
Harrisburg, Pennsylvania 17120

Michael A. McRae
D.C. Office of the People's Counsel
1133 15th Street, N.W. --Suite 500
Washington, DC 20005

Tejal Mehta
Federal Communications Commission
2100 M Street, NW, Room 8625
Washington, DC 20554

Terry Monroe
New York Public Service Commission
3 Empire Plaza
Albany, NY 12223

John Morabito
Deputy Division Chief
Accounting and Audits
Federal Communications Commission
2000 L Street, NW, Suite 812
Washington, DC 20554

Mark Nadel
Federal Communications Commission
2100 M Street, NW, Room 8916
Washington, DC 20554

John Nakahata
Federal Communications Commission
Office of the Chairman
1919 M Street, NW, Room 814
Washington, DC 20554

Lee Palagyi
Washington Utilities and Transportation
Commission
1300 South Evergreen Park Drive, SW
Olympia, WA 98504

Kimberly Parker
Federal Communications Commission
2100 M Street, NW, Room 8609
Washington, DC 20554

Barry Payne
Indiana Office of the Consumer Counsel
100 North Senate Avenue, Room N501
Indianapolis, IN 46204-2208

Jeanine Poltronieri
Federal Communications Commission
2100 M Street, NW, Room 8924
Washington, DC 20554

James Bradford Ramsay
National Association of Regulatory Utility
Commissioners
P.O. Box 684
Washington, DC 20044-0684

Brian Roberts
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102

Gary Seigal
Federal Communications Commission
2000 L Street, NW, Suite 812
Washington, DC 20554

Richard Smith
Federal Communications Commission
2100 M Street, NW, Room 8605
Washington, DC 20554

Pamela Szymczak
Federal Communications Commission
2100 M Street, NW, Room 8912
Washington, DC 20554

Lori Wright
Federal Communications Commission
2100 M Street, NW, Room 8603
Washington, DC 20554

Cristina Quaid

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Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Federal-State Joint Board	)	CC Docket No. 96-45
on Universal Service	)	

FURTHER COMMENTS OF THE ALLIANCE FOR PUBLIC TECHNOLOGY

The Alliance for Public Technology (APT), a nonprofit, consumer organization with over 200 grassroots members, organizations, and individuals, hereby submits these brief, further comments in response to the Public Notice, released July 3, 1996, by the Common Carrier Bureau, attaching a list of questions. APT respectfully submits the attached comments on the questions indicated.